

ASEAN

FOLLOW-UP ASSESSMENT

on the current status of Health Technology
Assessment (HTA) institutionalization and
capacity needs of ASEAN Member States



one vision
one identity
one community



ASEAN FOLLOW-UP ASSESSMENT

on the current status of Health Technology
Assessment (HTA) institutionalization and
capacity needs of ASEAN Member States

A project implemented under the ASEAN Health Cluster 3 on
Strengthening Health System and Access to Care Work
Programme for 2016-2020

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. The Member States of the Association are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

The ASEAN Secretariat is based in Jakarta, Indonesia.

For inquiries, contact:

The ASEAN Secretariat
Community Relations Division (CRD)
70A Jalan Sisingamangaraja
Jakarta 12110
Indonesia
Phone : (62 21) 724-3372, 726-2991
Fax : (62 21) 739-8234, 724-3504
E-mail : public@asean.org

Catalogue-in-Publication Data

ASEAN Follow up Assessment on the Current Status of Health Technology Assessment (HTA) Institutionalization and Capacity Needs of ASEAN Member States
Jakarta, ASEAN Secretariat, September 2021

362.10681

1. ASEAN – Health – Health Assessment
2. Health System – Health Services – Financial Management

ISBN 978-623-6945-45-2 (EPUB)



Philippine Department of Health-Health Technology Assessment Unit Working Group:
Anna Melissa Guerrero, MD, MPH(HTA); Anne Julienne Genuino-Marfori, RPh, MSc; Marvinson S. Fajardo, RN, MD; Yves Miel Zuñiga, FRSPH, AFCHSM, CHM; Sabrina Grace Aguinaldo, RPh; Arwin Jerome Onda, RPh

Stock photos from Pixabay (free for use), Patrick James Encarnacion, RPh, and Arwin Jerome Onda, RPh
Document layout design by Arwin Jerome Onda, RPh

This publication is supported by:



The text of this publication may be freely quoted or reprinted, provided proper acknowledgement is given and a copy containing the reprinted material is sent to the Community Relations Division (CRD) of the ASEAN Secretariat, Jakarta.

General information on ASEAN appears online at the ASEAN Website: www.asean.org

Copyright Association of Southeast Asian Nations (ASEAN) 2021.
All rights reserved.

Acknowledgments

This report is the result of the collaborative effort of the Association of Southeast Asian Nations (ASEAN) and the Philippine Department of Health - Health Technology Assessment Unit (DOH-HTAU).

The Philippine DOH-HTAU gratefully acknowledges the technical inputs provided by the following respondents from ASEAN Member States: Pg Dr Hj Md Khairol Asmiee Bin Pg Hj Sabtu (Brunei Darussalam), Prof. Sudigdo Sastroasmoro and Dr. Kalsum Komayani, MPPM (Indonesia), Assoc. Prof. Dr. Bouathep Phoumindr (Lao PDR), Dr. Izzuna Mudla Mohamed Ghazali (Malaysia), Dr. Anna Melissa Guerrero (the Philippines), Adj Asst. Prof. Fiona Pearce (Singapore), Songyot Pilasant (Thailand), and Dr. Nguyen Khanh Phuong, Dr. Ong The Due, Dr. Tran Thi Mai Oanh, and Dr. Tran Vinh Quang (Viet Nam).

The Philippine DOH-HTAU also acknowledges Dr. Kyaw Khaing (Myanmar) for providing brief updates on current efforts to institutionalize HTA in Myanmar.

For the invaluable assistance in the development of this report, sincere gratitude is also extended to the following: Health Intervention and Technology Assessment Program (HITAP) of Thailand, ASEAN Secretariat, and the Philippines' Department of Health - Bureau of International Health Cooperation (DOH-BIHC) for coordinating data collection amongst the ASEAN Member States.

***Maraming
salamat!***
(Thank you!)

Acknowledgments



Table of contents

i	Message of the Secretary-General of ASEAN
ii	Acronyms and abbreviations
1	Executive summary
3	Background
5	Study objectives and methods

Results	8
Discussion and recommendations	29
Conclusions	36
References	37
Appendix	38

Foreword by the Secretary-General of ASEAN

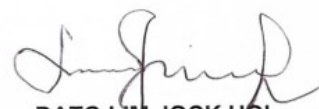
ASEAN Member States (AMS) share a common goal of promoting the development of a strong healthcare industry that will contribute to better healthcare facilities and services to meet the growing demand for affordable and quality healthcare in the region. The COVID-19 pandemic has further underscored the urgency of ASEAN to devise ways to achieve this goal. The institutionalization of Health Technology Assessment (HTA) in this region is vital in supporting decision-making on health system management and policy processes which synthesize evidence on clinical and cost-effectiveness, safety as well as address the use of health technologies whilst considering AMS' differing resources and capacity.



This study is designed to offer an assessment on the current status of HTA implementation of each AMS, as well as identify the challenges faces in operationalizing HTA due to capacity gaps and differing needs. This review further highlights opportunities to support and strengthen HTA institutions in ASEAN, particularly through capacity building activities which may later be undertaken at the regional level and conducted in collaboration with external partners.

This survey is an activity in the ASEAN Post-2015 Health Development Agenda for 2016-2020 under the work programme of ASEAN Health Cluster 3: Strengthening Health Systems and Access to Care led by the Philippines' Department of Health in collaboration with the ASEAN Health Sector. This follow-up evaluation offers relevant findings while serving as a complement to the baseline study in 2019 led by Thailand on *Country Assessment of HTA Capacity Gaps*.

I hope that the key recommendations presented in this study will provide useful guidance to relevant stakeholders and prospective partners in pursuing HTA implementation in the region, as we strive to ensure quality health care systems are sustainable, accessible and affordable to the peoples of ASEAN.


DATO LIM JOCK HOI
Secretary-General of ASEAN

Acronyms and Abbreviations



ACE	Agency for Care Effectiveness, Singapore
ADB	Asian Development Bank
AHC3	ASEAN Health Cluster 3
AIPHSS-AusAID	Australia- Indonesia Partnership for Health System Strengthening
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
ASERNIP-S	Australian Safety and Efficacy Register New Interventional Procedures-Surgery
AuG DOH	Australian Government Department of Health
BEPHS	Basic Essential Package of Health Services, Myanmar
CADTH	Canadian Agency for Drugs and Technology in Health
EU	European Union
FHI360	Family Health International 360
FUA	Follow-up assessment
GIN	Guidelines International Network
HITAP	Health Intervention and Technology Assessment Program, Thailand
HSPI	Health Strategy and Policy Institute, Viet Nam
HTA	Health Technology Assessment
HTAi	Health Technology Assessment International
INAHTA	International Network of Agencies for Health Technology Assessment
InaHTAC	Indonesian Health Technology Assessment Committee
Int'l	International
ISPOR	International Society for Pharmacoeconomics and Outcomes Research
JICA	Japan International Cooperation Agency
NGO	Non-government organization
NICE	National Institute for Health and Care Excellence, UK
NIMU	National Health Plan Implementation Monitoring Unit, Myanmar
PATH	Program for Appropriate Technology in Health
PH DOH	The Philippines Department of Health
PHARMAC	Pharmaceutical Management Agency, New Zealand
TAC	Technical Advisory Committee
UHC	Universal Health Care
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

Executive Summary

The ASEAN Member States (AMS) share multiple epidemiologic, cultural and health system situations that have similar demands and challenges in the introduction of emerging health technologies in the ASEAN region. While the AMS are at different stages of development in institutionalizing Health Technology Assessment (HTA) programs that are fit to their respective local context, many of them cover the same candidate health technologies for assessment. Although the formal assessment of HTA capacity of AMS is not yet complete, it is widely acknowledged that only a few AMS have mature HTA programs that are able to produce a number of HTAs every year while others are just starting to build or further strengthen their HTA capacity. In line with the ASEAN Health Cluster 3 (AHC3) Work Plan for 2016–2020, this study was conducted to assess the current status of HTA institutionalization of each AMS as well as capacity gaps/needs, and identify and map potential capacity building activities on HTA which could be undertaken at the regional level for the next work plan under AHC3.

SURVEY

A survey tool was developed to capture and describe the situations of AMS regarding their HTA capacity. The tool was disseminated to AMS during the month of January 2020. Out of the ten AMS, eight countries participated in the online survey. Among the eight respondent AMS, five countries answered that they have a dedicated HTA institution. On the other hand, three countries responded that they are in the planning stage of their HTA institutionalization.

The study revealed the following key findings which are consistent with the baseline assessment study results by Thailand:

KEY FINDINGS OF THE STUDY

- 1 The establishment of an HTA institution can be done with or without legal mandate.
- 2 Local government institutions (such as the policymakers, public health providers, and the national health insurance agencies) are the main/expected users of HTA.
- 3 Support of various stakeholder groups is essential in translating HTA outputs and services into policies.
- 4 Lack of budget, awareness of relevant stakeholders, and availability of local health and economic data remain a major challenge among AMS.
- 5 Inter-regional collaboration is one of the approaches to strengthen capacity building of HTA institutions.

In response to the gaps noted, we identified salient action points at the ASEAN level:

SALIENT ACTION POINTS

- Expand regional political capital for HTA by promoting it during ASEAN meetings.
- Increase capacity for education and training among all stakeholders.
- Develop common HTA methodological guidelines for AMS.
- Consolidate a unified regional research agenda to facilitate the conduct of joint
- Establish a regional database for knowledge management and information sharing of local health and economic input data, assessments, evaluations, and clinical practice guidelines.
- Explore other potential areas of harmonization in HTA among AMS.

While the ASEAN post-2015 goal was for all AMS to have an established HTA institution by 2020, this follow-up assessment (FUA) revealed that five out of eight respondent countries have achieved this goal. Nevertheless, other countries have reported significant progress in their planning activities to institutionalize HTA. Further, we note that AMS have different strengths and actionable areas in terms of HTA capacity and institutionalization. With the varying emerging areas for collaboration, partnership and advocacy, these gaps can serve as opportunities at the regional level. As evidenced in the findings, there is no one-size-fits-all solution on how to efficiently put up and sustain effective HTA implementation. Nevertheless, we can learn from good practices of countries in and out of the region as reported through initiatives like this. Furthermore, the region can leverage on the existing strengths and internal capacity of advanced countries to guide and navigate others toward becoming one ASEAN.

Moving forward, we presented in this FUA key recommendations that ASEAN can consider in support of existing regional roadmap and agenda.

Executive Summary




Background

The ASEAN Member States (AMS) share multiple epidemiologic, cultural and health system situations that have similar demands and challenges in the introduction of emerging health technologies in the ASEAN region. While the AMS are at different stages of development in institutionalizing Health Technology Assessment (HTA) programs that are fit to their respective local context, many of them cover the same candidate health technologies for assessment.

In 2011, *HTAsiaLink*, a network of HTA agencies across Asian countries, started collaborating on different areas of HTA with the leadership of founding countries namely Thailand, South Korea, and Taiwan. The network has been providing a platform for HTA research sharing, joint research, and peer-to-peer capacity building for member countries to help achieve more transparent systems of assessing health technologies toward the fulfillment of the Universal Health Care (UHC) goals across these health systems, especially those at the early stages of HTA development.

HTA is becoming more important as the AMS decide on which drugs, devices, or other health interventions to provide or reimburse within their health budget constraints. Although the formal assessment of HTA capacity of AMS is not yet complete, it is widely acknowledged that only a few AMS have mature HTA programs that are able to produce a number of HTAs every year while others are just starting to build or further strengthen their HTA capacity. In line with the ASEAN Health Cluster 3 (AHC3) Work Plan for 2016–2020, there is a need to provide insights into the current status, capacity, and needs of HTA institutions in the ASEAN region to inform the development of the future work plan and further build the capacity of AMS to undertake HTA.



there is a need to provide insights into the current status, capacity, and needs of HTA institutions in the ASEAN region to inform the development of the future work plan and further build the capacity of AMS to undertake HTA

Study Objectives and Methods

Objectives

While Thailand conducted a parallel baseline assessment on HTA capacity among AMS, this follow-up assessment was undertaken to complement the Thailand study in terms of mapping the current governance framework and capacity to perform HTA while taking into account the political, technical, and financial aspects and human resources.

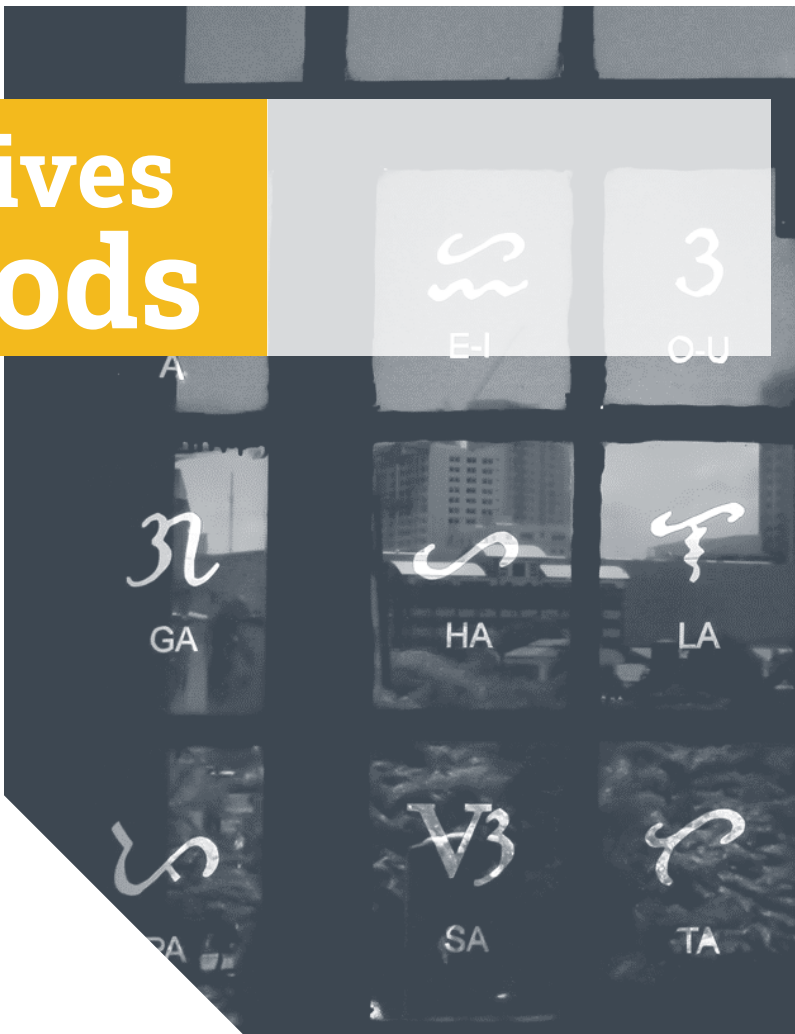
Specifically, the study intended to:

SPECIFIC OBJECTIVE 1

Assess the current status of HTA institutionalization of each AMS as well as capacity gaps/needs;

SPECIFIC OBJECTIVE 2

Identify and map potential capacity building activities on HTA which could be undertaken at the regional level for the next work plan under AHC3.



Methods

1.0. Tool Development

1.1. Literature Search Methods

Two reviewers performed a rapid literature search for relevant studies published from inception to August 23, 2019 via PubMed and major international health technology agencies [i.e., World Health Organization (WHO), European Network for Health Technology Assessment (EUnetHTA), and International Network of Agencies for Health Technology Assessment (INAHTA)]. The search terms used were “(“Technology Assessment, Biomedical”[Mesh]) AND capacity” in subjects, titles and abstracts, without filters/ restriction such as language.



Articles were excluded if they did not meet the selection criteria outlined in Table 1 or were duplicate publications.

From a total of 260 citations, 217 titles and abstracts that did not meet the inclusion criteria were excluded, leaving 43 potentially relevant citations for full-text review. Of these potentially relevant full-text articles, 20 were included in the review. The PRISMA flowchart of the study selection is illustrated in the Appendix.

1.3. Development of the Data Collection Tool




The tool was developed by adapting questions from different citations, and collecting the questions aligned with the objectives of the study. It aimed to capture and describe the situations of AMS regarding their HTA capacity by setting up a preliminary question asking if the country has an established HTA unit or institution (operationally defined as “having dedicated staff, budget and other resources, and process and methods guide”). AMS with established HTA units or institutions were given a different set of questions (i.e., Questionnaire A) than those who were in the planning stage (i.e., Questionnaire B). This was done to accurately capture the current situation given the highly varied capacity and stages of development of HTA institutionalization in each AMS.

1.2. Selection Criteria and Methods

Two reviewers screened a total of 260 citations from the rapid literature search and major international HTA agencies. The full text of potentially eligible studies with relevant abstracts and titles were retrieved and evaluated for eligibility using set inclusion (in Table 1) and exclusion criteria.

Table 1

Inclusion criteria

	Population Regional / National Level
	Intervention / Exposure HTA (Institutionalization)
	Outcomes Capacity gaps or capacity building

Through a rapid review of available citations and existing tools from international health technology agencies, four (4) domains were identified, namely: *Mandate, Governance and Capacity, Assessment and Appraisal, and Evaluation and Monitoring*. The questions adapted were subdivided into these domains. Table 2 provides the description of the domains. Note that for Questionnaire B, only the first two domains were included.

2.0. Dissemination of the Study Materials

The study materials (study protocol, survey background, survey tool containing Questionnaires A and B) were provided in Microsoft Word® document format and were disseminated to AMS for feedback. The study materials were then revised accordingly. All finalized study materials were sent (as initiated by the Health Division) to the ASEAN Health Cluster 3 country coordinator and the *HTAsiaLink* Network focal points of each AMS for data collection. Data collection was done via an online version of the survey tool using Qualtrics^{XM} Survey Software.

3.0. Data Analysis

The data gathered were analyzed using descriptive statistics. Graphs, charts, and tables were generated as needed. Further clarification was requested from AMS as needed. TOWS analysis was performed to process the results and come up with recommendations.

Table 2

Description of Domains of the Tool



Mandate

Institutional arrangement, legal statute, and policy support of the HTA unit or institution in the country



Governance and Capacity

Management structure, personnel and capacity building of HTA in the country



Assessment and Appraisal

Methods of assessment and appraisal of health technology in the country



Evaluation and Monitoring

Evaluation of the quality and impact of outputs of the HTA program in the country





Results

Out of the 10 ASEAN Member States (AMS), eight countries participated in the online survey. Among the participating AMS, five countries answered that they have a dedicated HTA institution. On the other hand, three countries are in the planning stage of their HTA institutionalization. Table 3 lists the participating countries.

While Myanmar was not able to participate in the survey, it provided brief updates on the current efforts to institutionalize HTA in the country. Based on the provided updates, Myanmar can be classified together with Brunei Darussalam, Lao PDR, and Viet Nam. These updates are presented in the section “Countries planning to establish a dedicated HTA institution.”

Table 3

Response of the ASEAN Member States

With dedicated HTA institution	Indonesia Malaysia Philippines Singapore Thailand
Planning to establish a dedicated HTA institution	Brunei Darussalam Lao PDR Viet Nam

Countries with dedicated HTA institution

Indonesia
Malaysia
Philippines
Singapore
Thailand



Domain 1 Mandate

Among the AMS with established HTA institution, four countries responded that it was their government (Ministry / Department of Health) that initiated the establishment of HTA institution. Meanwhile, the establishment of the HTA institution in Thailand was driven by a non-profit non-government institution (i.e., health researchers and academe).

Demand for high quality health care and financial risk protection due to rising health care costs were the main drivers of establishing an HTA institution in these countries. Singapore uses HTA to drive better decision-making about clinically effective and cost-effective patient care to ensure the sustainability of the healthcare system. Thailand, on the other hand, noted that HTA serves as a response to the need for a sound system in the assessment and management of health technologies. Meanwhile, only Indonesia and the Philippines have reported to have implemented laws which mandated the establishment of a national HTA institution. Indonesia was mandated by the National Health

Insurance Law to utilize HTA in cost containment and quality control of healthcare. None of the AMS considered cultural considerations or regional initiatives as main drivers for establishing HTA capacity in their local contexts. Table 4 summarizes the responses of the countries on the main drivers of HTA institutionalization.

To further strengthen the institutionalization and capacity building activities of their respective HTA institution, these countries have sought collaborations with both local and international development partners and institutions. In the local setting, these countries would tap on their local academic centers and government institutions as primary partners in conducting assessments while international collaborations are facilitated through the provision of technical assistance by development partners (e.g., *HTAsiaLink* network, HTAi, iDSI, UNDP, WHO) or HTA institutions (e.g., NICE, HITAP, CADTH, PHARMAC). Table 5 summarizes the responses of these countries.

Table 4
Main Drivers for the Establishment of HTA institution

Main Drivers	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Demand for high quality health care	✓	✓	✓	✓	
Financial risk protection due to health care costs	✓	✓	✓	✓	✓
Mandated by law	✓		✓		
Global or regional movement/ initiatives & commitment (e.g., WHO, ASEAN)					
Cultural considerations					

Table 5
Nature of Local and International Institutions Each HTA Institution Has

Nature of institutions	Country									
	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Local	Int'l	Local	Int'l	Local	Int'l	Local	Int'l	Local	Int'l
Government	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Academe	✓		✓	✓	✓	✓	✓	✓	✓	✓
Professional medical societies & associations	✓		✓	✓			✓	✓	✓	
Hospitals	✓		✓				✓		✓	
Patient associations			✓				✓		✓	
Industry			✓				✓	✓	✓	
Other specified international partners	HITAP PATH AIPHSS- AusAID iDSI HTAi HTAsiaLink WHO UNDP		WHO INAHTA HTAsiaLink HTAi ASERNIP-S ISPOR EuroScan GIN		WHO UNICEF EU ASEAN NICE HITAP		NICE AuG DOH CADTH PHARMAC INAHTA HTAi HTAsiaLink		WHO NICE iDSI HTAsiaLink UNAIDS FHI360 PH DOH NGO	

Int'l: International | **HITAP:** Health Intervention and Technology Assessment Program, Thailand | **PATH:** Program for Appropriate Technology in Health | **AIPHSS-AusAID:** Australia- Indonesia Partnership for Health System Strengthening | **iDSI:** International Decision Support Initiative | **HTAi:** Health Technology Assessment International | **WHO:** World Health Organization | **UNDP:** United Nation Development Program | **INAHTA:** International Network of Agencies for Health Technology Assessment | **ASERNIP-S:** Australian Safety and Efficacy Register of New Interventional Procedures – Surgical | **ISPOR:** International Society for Pharmacoeconomics and Outcomes Research | **GIN:** Guidelines International Network | **UNICEF:** United Nations Children's Fund | **EU:** European Union | **ASEAN:** Association of Southeast Asian Nations | **NICE:** National Institute for Health and Care Excellence, UK | **CADTH:** Canadian Agency for Drugs and Technology in Health | **PHARMAC:** Pharmaceutical Management Agency, New Zealand | **FHI360:** Family Health International 360 | **HTAi:** Health Technology Assessment International | **AuG DOH:** Australian Government Department of Health | | **UNAIDS:** Joint United Nations Programme on HIV/AIDS | **PH DOH:** Philippine Department of Health | **NGO:** Non-government agency

As for the existing HTA infrastructure among these countries, all respondents have developed their respective methods guide, process guide, and decision criteria for HTA, noting cost-effectiveness, budget impact, magnitude of disease, therapeutic value (safety/efficacy/effectiveness), and feasibility of implementing HTA recommendations as the commonly used decision criteria. Ethical, legal, or social considerations was also generally part of their decision criteria.

Indonesia is still in the process of developing an institutionalization model/document that is planned to incorporate all HTA-related stakeholders in Indonesia into a collaborative framework.

Table 6 and Table 6.1 summarize the responses of these countries.

Availability of local data is essential in ensuring the provision of contextualized evidence in decision making. As shown in Table 7, countries generally have locally available sources of clinical, demographic, utility, and patterns of utilization data. Indonesia added that it obtains epidemiological data from the NHI agency, hospitals, and health and household surveys. Noted local data gaps were economic and costing data in the Philippines. In Singapore, in the event of unavailable local data, published data from other countries are adapted, if they are considered applicable and generalizable to the local context.

Table 6
Existing HTA Infrastructure

HTA Infrastructure	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Methods guide for HTA	✓	✓	✓	✓	✓
Process guide for HTA	✓	✓	✓	✓	✓
Decision criteria	✓	✓	✓	✓	✓
Institutional processes ¹		✓	✓	✓	
HTA studies database		✓			✓
Health management information systems		✓		✓	
Other specified answers			Local priorities		

¹**Institutional processes:** Established healthcare system processes relevant to HTA such as regulatory processes (registration of health technologies in the market prior to HTA); health technology management (e.g., existence of public health programs which implements, manages, monitors, and evaluates the use of health technologies in the public health system); health financing

Table 6.1
Decision Criteria Used in Making Recommendations

Decision criteria	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Cost-effectiveness	✓	✓	✓	✓	✓
Budget impact	✓	✓	✓	✓	✓
Magnitude of disease	✓	✓	✓	✓	✓
Therapeutic value (safety / efficacy / effectiveness)	✓	✓	✓	✓	✓
Feasibility considerations	✓	✓	✓	✓	✓
Ethical, legal or social considerations		✓	✓	✓	✓
Severity of disease		✓		✓	✓
Patient preferences		✓		✓	

HTA institutions from these countries mainly provide systematic reviews, rapid reviews, economic evaluations, academic and training activities, consultations, and managing or commissioning research (see Table 8). The Indonesian HTA committee (InaHTAC) serves as a resource body that discusses issues related to the use of health technologies at the national/regional level.

Demands for HTA outputs and services are mainly driven by policy makers, public health care

providers, national health insurance agencies, industry partners, and professional medical societies and associations, while the reports generated feed mainly to policy makers, public health care providers, industry partners, national health insurance agencies, professional medical societies and associations, health researchers / academe, private health care providers, and patients. Singapore notes that its full technical evaluation reports are not accessible to the public. Instead, guidance documents are made available

which summarize key clinical and economic evidence that provided the basis for the committee's deliberations and final funding decisions. Policy makers identified by these countries vary from health ministries, drug advisory committees, medical technology advisory committees, national pharmacy and therapeutics committee and hospital formulary committees. For Thailand, there may be some stakeholders (e.g., medical societies, health professionals, industry, patients) who demand or use the outputs and services of its HTA institution. However, once the research is done, the results are primarily used by policymakers (referred as their Ministry of Public Health and some national committees or similar types of institutions that have been appointed to make a

national decision) who need the evidence for making a decision. Responses of the countries for the demand and end-users of HTA outputs and services are summarized in Table 9.

These HTA institutions provide outputs and services that are used for the creation of new policies and improvement of policies depending on the current healthcare needs of the country. The commonly identified policy areas where HTA contributes to include benefit package development and health service delivery, followed by policy development for the improvement of quality of care and for disinvestments. Table 10 summarizes the responses of these countries.

Table 7
Local Data Availability

Types of data	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Clinical	✓	✓	✓	✓	✓
Demographic	✓	✓	✓	✓	✓
Utility data (QALY, DALY)	✓	✓	✓	✓	✓
Patterns of utilization	✓	✓	✓	✓	✓
Economic	✓	✓		✓	✓
Costing	✓	✓		✓	✓
Other specified answers	Epidemiologic		Epidemiologic		

Table 8
Outputs and Services Each HTA Institution Provides

Outputs and services	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Systematic reviews	✓	✓	✓	✓	✓
Rapid reviews		✓	✓	✓	✓
Economic evaluations	✓	✓		✓	✓
Academic and training activities	✓	✓		✓	✓
Consultation	✓	✓	✓		✓
Managing or commissioning research	✓		✓	✓	✓
Technical query reports	✓	✓	✓		
Clinical practice guidelines		✓		✓	
Qualitative studies [^]				✓	✓
Feasibility studies		✓		✓	✓
Establishment of research needs			✓		
Other specified Answers				Patient materials	

[^]Qualitative studies (e.g., Focused Group Discussions, Key Informant Interview, In-Depth Interview)

Table 9
Demand and End Users of HTA Outputs and Services

Stakeholder	Country													
	Indonesia			Malaysia			Philippines			Singapore			Thailand	
	Who demands	End users	Who demands	End users	Who demands	End users	Who demands	End users	Who demands	End users	Who demands	End users	Who demands	End users
General public	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓	N/A	✓
Policy makers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public health care providers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
National health insurance agency	✓	✓			✓	✓							✓	✓
Industry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Patients	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Professional medical societies & associations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Health researchers / Academe	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Private health care providers		✓		✓		✓		✓		✓		✓		
Private medical insurance					✓									

Table 10
Policy Areas Where HTA Contributes in the Process of Decision Making

Policy areas	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Benefit package Development	✓	✓	✓	✓	✓
Health service delivery	✓	✓	✓	✓	✓
Improvement of quality of care	✓	✓	✓	✓	
Disinvestment	✓	✓	✓	✓	
Clinical guidelines development		✓		✓	
Registration of health technologies	✓	✓			
Other specified answers				Financing decisions	



The institutionalization of HTA in a country is a multi-faceted undertaking that needs the support of various stakeholder groups. These countries have noted that the following are essential in the establishment of an HTA institution:

- appropriate facilities,
- sufficient funding,
- institutional support,
- support from stakeholder groups
- trained personnel, and
- collaboration with other institutions

Singapore also highlighted the importance of political backing and stakeholder support in the establishment of HTA as a national priority. Indonesia notes the importance of a rational implementation strategy in the form of an HTA roadmap which is in line with policy objectives and country-specific values. For the Philippines, legal mandate is vital for the institutionalization of HTA.



Domain 2

Governance and Capacity

Established HTA institutions among AMS are governed by experts from various fields of health technologies who deliberate on coverage decisions based on preset criteria. These body of experts and scientific committees are supported by internal assessment staff, a technical secretariat, and academe in producing internal assessments. Interestingly, Singapore has two additional bodies that inform the work of their agency (Agency for Care Effectiveness, ACE): the first is an advisory council comprising local professionals across a range of disciplines which provides long-term strategic direction to the agency; and another is an international advisory panel which comprises overseas HTA experts who provide inputs into Singapore's HTA methods, processes, and new projects, as required to ensure that they are aligned with international best practices. Table 11 summarizes the responses of the countries regarding the HTA management structure.

Figure 1 shows the total personnel per country. Table 12 shows the distribution of resource personnel across different categories. It is notable that only Thailand has staff dedicated for communications and collaborative work at international level. Indonesia adds that its technical secretariat is also responsible for assessment activities, including writing scientific reports and coordinating research activities. Further, Indonesia, Malaysia, the Philippines, and Singapore have identified other positions which are described as follows:

Table 11
HTA Management Structure

Management structure	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Experts	✓	✓	✓	✓	✓
Scientific or advisory committee	✓	✓	✓	✓	
Technical secretariat	✓	✓	✓	✓	
Executive committee	✓	✓			
Board of directors					
Assessment team	Internal staff and Academe	Internal staff	Internal staff and Academe	Internal staff and Academe	Internal staff

Figure 1
Total personnel of HTA institutions per country (as of February 2020)

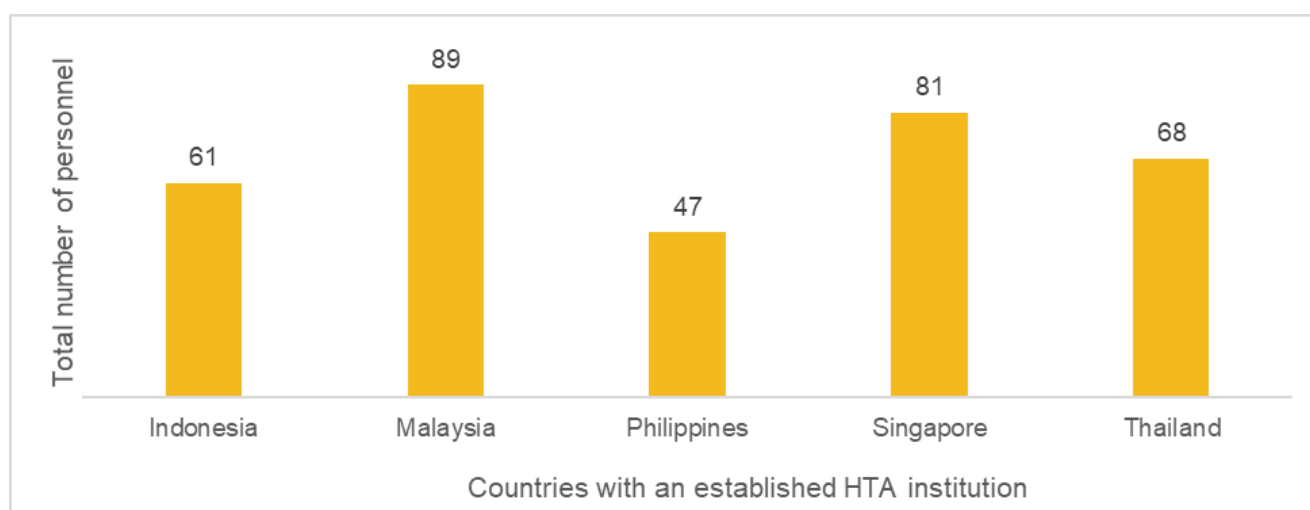


Table 12
Personnel Distribution in Different HTA Institutions

Personnel categories	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Collaborating researchers	0	30	-	-	2
Administrative staff	3	5	2	15	13
Associate researchers	0	-	-	-	-
Research assistants	0	-	-	-	15
Advisors/ Consultants	9	20	30	-	2
Trainees/ Interns	-	-	-	-	1
Technical Secretariat	15	-	4	2	-
Medical librarian/ Information specialist	-	5	-	-	-
Others	34	29	11	64	35
Total	61	89	47	81	68

Collaborating researcher: can collaborate occasionally not-for-profit | **Administrative staff:** dedicated in completing tasks for office operations related to document management and accounting and finance | **Associate researcher:** from time to time collaborates and earns money as free-lance | **Research assistant:** help researchers with a technical task (e.g., writing scientific reports, coordinating research activities, etc.) | **Advisor/Consultant:** provides expert opinion/s on a specific subject matter | **Technical secretariat:** organize meetings, makes minutes of the meeting, ensures document completeness and correctness of submissions | **Trainee/Intern:** students or recent graduates not paid or paid very little for their work

INDONESIA

In Indonesia, other personnel are agents from universities and expert panels. The main task of HTA agents is to conduct assessments of HTA studies – which includes developing proposals, data collection, analysis and final report writing, among other tasks. The main task of the expert panel is to provide expertise related to the HTA study. The number of these other personnel may vary depending on the number of studies being conducted.

MALAYSIA

In Malaysia, there are two levels of governing bodies: one oversees all the agencies' activities and a technical advisory committee for each of the activities. In-house researchers are usually involved in more than one of these four main activities namely horizon scanning, conducting health technology assessments, mini-HTA or rapid reviews, economic evaluations, and development and implementation of Clinical Practice Guidelines (CPG). In addition, they also facilitate discussion with multidisciplinary experts and stakeholders, and evaluate the reports.

PHILIPPINES

In the Philippines, there are 11 internal HTA researchers conducting HTAs on drugs, vaccines, clinical equipment and devices, medical and surgical procedures, preventive and promotive health, traditional medicine, and other health technologies. Activities include evidence synthesis, economic evaluations, facilitating consultative meetings with relevant stakeholders, and publication of reports, among others.

SINGAPORE

Singapore noted having approximately 50 technical specialists (of different backgrounds) who conduct HTAs on drugs, vaccines, gene therapies and medical technologies in line with their HTA agency's methods and process guides. In addition to preparing technical reports, manuscripts and guidance documents for publication, the specialists are also involved in stakeholder engagement, horizon scanning, value-based pricing negotiations with industry, drug utilization monitoring and outcomes evaluation, and HTA implementation (i.e. influencing prescribing behaviors), among other responsibilities.

Figure 2
Total internal HTA staff per country (as of February 2020)

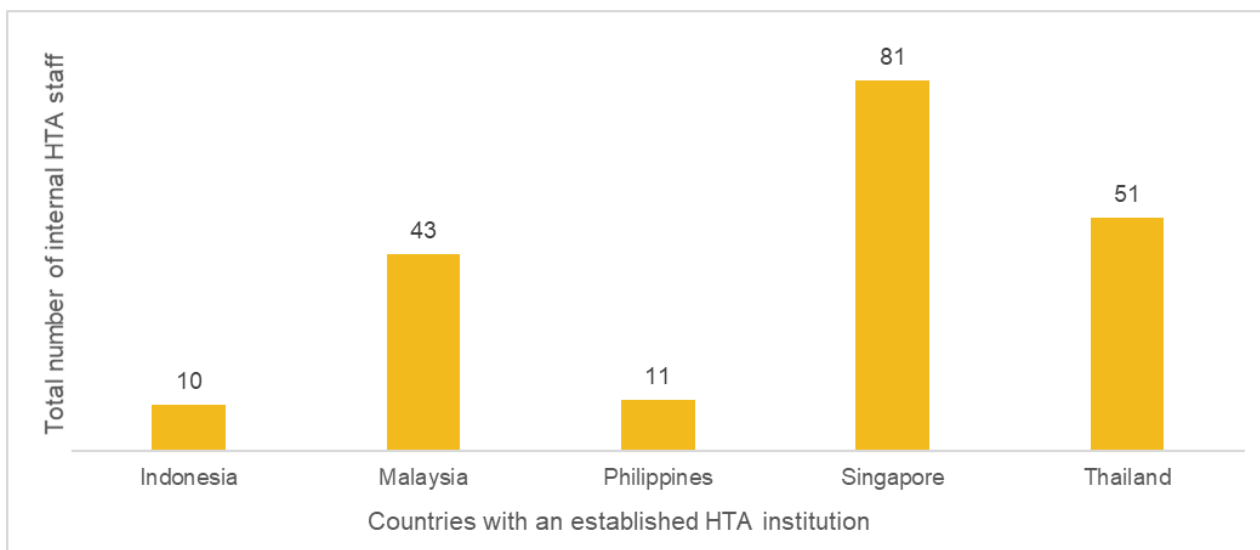


Table 13
Professional Background of Internal HTA Staff Per Country

Professional background	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Clinical/ Medical	2	25	13	50	22
Social science	-	4	-	-	5
Epidemiology	0	2	-	5	1
Economics	2	2	-	10	5
Legal	-	-	-	-	-
Public health	5	5	2	5	6
Statistics	-	-	-	3	1
Information specialist	-	5	-	-	-
Media relations	-	-	-	2	5
Others	1	-	-	6	6
Total	10	43	15	81	51



Figure 2 shows the total internal HTA staff per country, while Table 13 describes the various disciplines that comprise the professional backgrounds of the internal staff. The most common professional backgrounds of the assessment teams across AMS are clinical/medical education and public health. Some AMS also have epidemiologists and economists as part of their internal team. Indonesia added that it has a vocational high school graduate as part of internal HTA staff. According to them, vocational high school graduates are hired to work on financial administration related to HTA activities. Singapore noted that most of its 50 technical staff have a pharmacy or science background, many with post graduate qualifications in health economics or public health, and should there be any additional experts required (e.g., legal, healthcare financing, media relations, information specialists) to inform the HTA work, its HTA institution taps on other divisions of its Ministry of Health to provide support. Singapore also has approximately 30 staff within its HTA institution who oversee administration, planning and policy, or are involved in developing short clinical practice guidelines and care pathways as support tools for healthcare professionals. Thailand added that communication officers are part of their team.

All countries have a mechanism in place to declare conflict/s of interest for all personnel involved in the assessments.

In terms of educational courses in HTA, all AMS offer workshops and seminars. Singapore and Thailand offer both master's and doctorate degree in HTA. The Philippines is in the process of developing a master's degree program in partnership with their national university. On the other hand, Singapore noted the need for applied programs/ internships where students can apply their learning into practice to understand the broader policy implications of their work to the Singaporean healthcare system.

Table 14 shows the currently offered HTA-related topics in the country. In the same table, the identified HTA-related topics needed by the HTA personnel of each country. These countries have identified that there are still specific HTA-related topics needed by their respective HTA personnel despite the existence of those training opportunities in their country.

Table 14
Identified HTA-related Topic Offerings and Gaps

HTA-related topics	Country									
	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	Currently offered in country	In need by the HTA personnel	Currently offered in country	In need by the HTA personnel	Currently offered in country	In need by the HTA personnel	Currently offered in country	In need by the HTA personnel	Currently offered in country	In need by the HTA personnel
Introduction and application of HTA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Topic selection process for HTA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Institutional processes for HTA		✓		✓		✓		✓		✓
Health care and policy planning		✓		✓		✓		✓		✓
Evidence Based Medicine	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Systematic reviews and meta-analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Measuring health outcomes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Overview of health economics	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Decision analytic modelling	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Budget impact analysis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethical, legal, social, and health system impact assessment		✓		✓		✓		✓		✓
Other specified answers					Qualitative Research Methods			Implementation science		



Domain 3 Assessment and Appraisal

With the exception of Thailand, established HTA agencies in AMS have formal written documents describing their process for selecting and prioritizing topics to undergo assessment (see Table 15). Evidence synthesis, decision analytic modelling, and budget impact assessments are the commonly applied methods in the evaluation of health technologies.

Assessment methods employed by the different countries are described in Table 16.

As with the dissemination methods of HTA outputs and services, websites and presentations (trainings, seminars, workshops, conferences) were commonly identified by these countries as useful mechanisms to circulate recommendations of their respective HTA institutions. Table 17 summarizes the dissemination methods of HTA outputs or services by these countries.

Table 15

Document Containing the Prioritization of Health Technologies for Assessment

Indonesia	Health Technology Assessment Guideline; MOH Regulation no. 51, Year 2017: Health Technology Assessment Guideline in National Health Insurance Program
Malaysia	Health Technology Assessment Manual
Philippines	Health Technology Assessment Process Guide
Singapore	Drug Evaluation Methods and Process Guide Medical Technologies Evaluation Methods and Process Guide
Thailand	<i>Not available</i>

Table 16

Assessment Methods Used in HTA

Assessment methods	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Evidence synthesis (systematic review, meta-analysis)	✓	✓	✓	✓	✓
Decision analytic modelling	✓	✓	✓	✓	✓
Budget impact assessment	✓	✓	✓	✓	✓
Primary clinical studies			✓	✓	
Ethical, social, legal, and health system impact assessment		✓			✓
Feasibility studies				✓	✓
Other specified answers				Group discussions with local clinical Experts	

Table 17
Dissemination Methods of HTA Outputs or Services

Dissemination methods	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Websites	✓	✓	✓	✓	✓
Presentations (trainings, seminars, workshops, conferences)	✓	✓	✓	✓	✓
Papers published in international scientific journals	✓	✓		✓	✓
Electronic and printed versions of reports	✓	✓	✓		✓
Papers published in national scientific journals	✓	✓			✓
Electronic and printed versions of newsletters	✓	✓			✓
Issuance of official government documents		✓	✓	✓	
Collaboration with media					✓
Opinion leaders		✓			
Other specified answers			Consultations, e-mail to hospitals and societies	Guidance documents and plain English summaries published online	



Domain 4 **Evaluation and Monitoring**

Ensuring the quality and scientific rigor of the assessments is crucial. The most common method in evaluating the HTA institution outputs and services is through external peer review. Table 18 summarizes the responses per country.

In terms of assessing the impact of recommendations, all countries except the Philippines noted the use of impact evaluation indicators. The common indicators used by these countries are the consideration of HTA by decision-makers, acceptance of HTA recommendations/ conclusions, and HTA material incorporated into policy or administrative documents. Indonesia notes that HTA recommendations are target indicators in the Ministry of Health’s strategic plan. Table 19 summarizes the indicators used per country.

All agreed that having institutional support, quality outputs, stakeholder involvement,

established reputation and credibility of HTA institution, and timeliness are essential in having high impact recommendations. Indonesia reiterates the importance of timeliness of recommendations in order to render them useful in improving effectiveness, efficiency and quality of healthcare. Singapore added that enabling transparency in the process, as well as providing outputs written in plain English to promote clear understanding by all stakeholders, drives the acceptance and adoption of recommendations from the HTA institution. Table 20 summarizes the strategies deemed essential by these countries to have high impact recommendations.

Table 18
Methods Used to Evaluate Quality of Outputs or Services

Criterion	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
External peer review		✓	✓	✓	✓
Evaluation of HTA output by methods working group		✓			✓
Quality management system					
Other specified answers	Internal peer review	Periodic survey		Internal peer review	

Table 19
Indicators Used in Assessing Impact of Recommendations

Indicators	Countries with indicators to assess the impact of recommendations			
	Indonesia	Malaysia	Singapore	Thailand
HTA considered by decision-maker	✓	✓	✓	✓
HTA recommendations/ conclusions accepted	✓	✓	✓	✓
HTA material incorporated into policy or administrative documents	✓	✓	✓	✓
HTA linked to changes in practice		✓	✓	✓
HTA linked to changes in technology	✓		✓	
HTA linked to changes in cost of medical practice	✓		✓	
HTA demonstrated that technology met specific program requirements	✓		✓	
HTA information used as reference material	✓	✓		
HTA linked to changes in quality of care			✓	
HTA linked to changes in legislation	✓			
HTA linked to changes in health status			✓	
HTA linked to changes in patients' perceptions				
HTA linked to changes on organization or facilities				
Other specified answers			Impact of funding decisions (and use of a technology) on patient outcomes	

Table 20
Strategies Essential to Have High Impact Recommendations

Strategies	Country				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
Institutional support	✓	✓	✓	✓	✓
Quality of outputs	✓	✓	✓	✓	✓
Involving stakeholders	✓	✓	✓	✓	✓
Reputation & credibility of HTA institution	✓	✓	✓	✓	✓
Timeliness	✓	✓	✓	✓	✓
Dissemination strategies	✓		✓	✓	✓
Updating process			✓	✓	✓
Other specified answers					

Countries planning to establish a dedicated HTA institution

Brunei Darussalam
Lao PDR
Viet Nam

The sections below report the results of the respondent countries which are planning to establish a dedicated HTA institution. As for the case of Myanmar, it provided brief updates on the institutionalization of HTA in the country. According to them, Myanmar tries to conduct HTA for its Basic Essential Package of Health Services (BEPHS) as described in their National Health Plan (2017-2021) with technical assistance from HITAP (Thailand) and WHO. It added that the National Health Plan Implementation Monitoring Unit (NIMU), a dedicated unit for monitoring Myanmar NHP implementation towards UHC under Ministry of Health and Sports, is currently the responsible unit to conduct HTA on BEPHS. Further, HTA institutionalization is a long-term goal of NIMU and capacity building is recognized to be essential for its development because of scarcity of resources.



Domain 1 **Mandate**

Three (Brunei Darussalam, Lao PDR, Viet Nam) out of eight AMS responded that they still have no established HTA institution; however, all three responded that they recognize HTA as a vital tool in achieving UHC.

Brunei Darussalam is in the process of developing a policy to support the institutionalization of HTA in its country. It plans to formalize the establishment of an HTA institution, build technical capacity within their Ministry of Health, develop guidelines on HTA process, and engage stakeholders in implementing the HTA process and in generating its recommendations. Further, it added that their government and public health care providers have the capacity to establish an HTA institution. It noted that the lack of trained personnel in their country is perceived as a barrier in the establishment of HTA institution.

Lao PDR expressed the intention to create a legal statute on HTA; however, it noted that limited budget, and lack of institutional support, process and methods guide, personnel and researchers, and facilities are the perceived challenges. Lao PDR identified the government, donor agencies and development partners [e.g., WHO, Japan International Cooperation Agency (JICA), World Bank (WB), Asian Development Bank (ADB) and NGOs] as the bodies with the capacity to establish an HTA institution.

Viet Nam expressed the intention to develop an HTA institution. Their government, national health insurance agency, public health care providers, and academe are identified as the bodies who have the capacity to establish an HTA institution. The Health Strategy and Policy Institute (HSPI), the national institute for health policy development in Viet Nam, has established a new unit - the Department of Pharmaceutical and Medical Devices whose key function is related to HTA. The methods and process guides on HTA are currently under review by their stakeholders. Furthermore, it is expecting that the institutionalization of HTA will be achieved through a legal mandate under the proposed revision of their Health Insurance Law in 2021. Several perceived barriers in the establishment of its own HTA institution include conflict with stakeholders, and lack of requisites such as political buy-in, institutional support, funding, trained personnel, and facilities.

In establishing HTA institutions, these countries plan to collaborate with local partners, international development partners and HTA institutions, primarily those associated with government agencies, academic centers providing international partnerships, and professional medical societies and associations.

Table 21
Plans for Establishment of HTA Institution

Parameter	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
In the process of creating a legal statute, supporting policy or act on HTA	✓		
Plans to create a legal statute, supporting policy or act on HTA	N/A	✓	✓
Have plans to establish an HTA institution	✓		✓

Table 22
Perceived Barriers in Institutionalization of HTA

Perceived Barriers	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Lack of trained personnel	✓	✓	✓
Lack of facilities		✓	✓
Lack of funding		✓	✓
Lack of institutional support		✓	✓
Lack of political buy-in/ low priority of the country			✓
Conflict with stakeholders			✓
Ethical or social considerations			
Legal considerations			

Table 23
Nature of Local and International Institutions Each HTA Institution Plan to Collaborated With

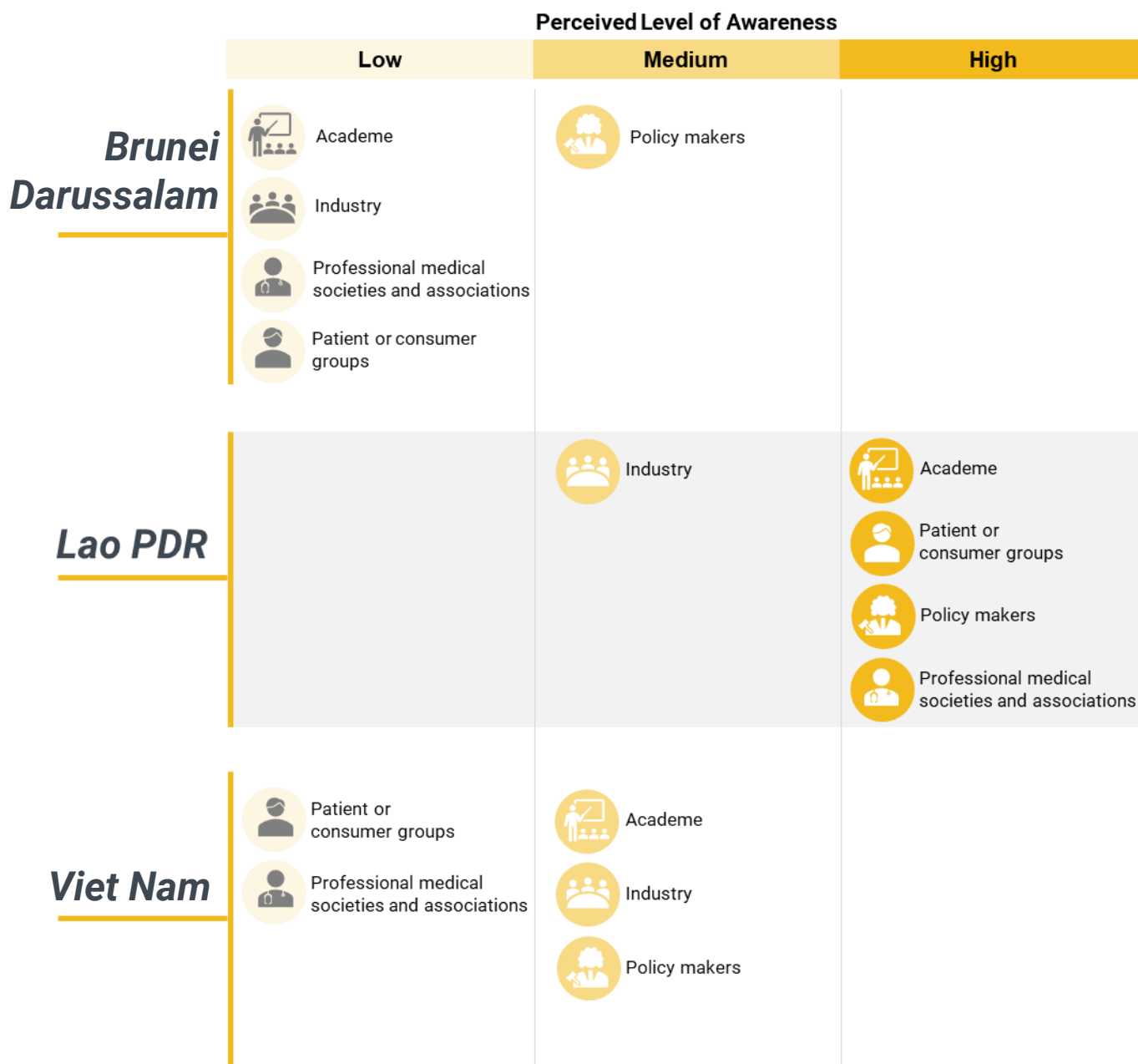
Nature of institutions	Country					
	Brunei Darussalam		Lao PDR		Viet Nam	
	Local	Int'l	Local	Int'l	Local	Int'l
Government		✓	✓	✓	✓	✓
Academe		✓	✓	✓	✓	✓
Professional medical societies & associations		✓	✓	✓	✓	✓
Hospitals		✓	✓	✓	✓	
Patient associations			✓	✓	✓	
Industry			✓	✓	✓	✓
Other specified answers			NGO, HITAP			

NGO: non-government organization | **HITAP:** Health Intervention and Technology Assessment Program

In terms of perceived level of awareness on HTA by various stakeholder groups, it was notable that most stakeholders in Brunei Darussalam have low level of awareness on HTA. Lao PDR perceived that most of their stakeholders have a high perceived awareness on HTA. In Viet Nam, most stakeholders in general,

have medium level of awareness on HTA. It added that workshops and training on HTA targeting policymakers are being conducted each year. The overall improvement of stakeholder awareness on the applications and benefits of HTA will help these countries in institutionalizing HTA. Figure 3 summarizes the responses of these countries.

Figure 3
Perceived level of awareness on HTA by various stakeholder groups among countries on planning stage



**Based on the response of these countries on the survey conducted by the Philippines (February 2020).*

These countries reported to have locally available sources for both patterns of utilization and demographic data. However, in Viet Nam, making clinical, economic, and utility data available are seen as a challenge, while utility and costing data are unavailable in Brunei Darussalam. Table 24 summarizes the local data availability per respondent country.

All three countries are planning to prioritize medicines, medical devices, medical/surgical procedures, and screening and diagnostic procedures for the HTA institution. It is important to note that Viet Nam is already conducting HTA on medicines and medical devices (through HSPI) to guide the development of their health insurance reimbursement packages (including the list of medicines for reimbursement) for these health technologies. It added that currently, budget impact of drugs is mandatory when

considering the inclusion of a drug into the health insurance drug list. While cost-effectiveness analysis is not mandatory, it is encouraged to be provided. For Lao PDR, it also plans to conduct HTA on health facilities. Table 25 summarizes the responses per country.

All three countries have noted that public health care providers and policy makers (i.e., Ministry/ Department of Health) are the perceived end-users of HTA. Brunei Darussalam added that the Ministry of Finance and Economy as well as other relevant government agencies will also benefit from the recommendations of its planned HTA institution for financial resource allocation. Table 26 summarizes the responses per country.

Table 24
Local Data Availability

Data	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Patterns of utilization	✓	✓	✓
Demographic	✓	✓	✓
Clinical	✓	✓	
Economic	✓	✓	
Costing		✓	✓
Utility data (QALY, DALY)		✓	

Table 25
Planned Types of Health Technology to Prioritize for HTA

Type of Health Technology	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Medicines	✓	✓	✓
Vaccines	✓	✓	✓
Medical devices	✓	✓	✓
Medical/ Surgical procedures	✓	✓	✓
Screening & diagnostic procedures	✓	✓	✓
Public health programs or initiatives		✓	
Health services delivery		✓	
Traditional and complementary medicines		✓	
Systems and organizations of care		✓	
Other specified answers		Health facilities	

Table 26
Perceived End Users of HTA

Stakeholder	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Policy makers	✓	✓	✓
Public health care providers	✓	✓	✓
Private health care providers	✓	✓	
Industry		✓	✓
National health insurance agency		✓	✓
General public		✓	
Professional medical societies & associations		✓	
Health researchers / Academe		✓	
Private medical insurance		✓	
Patients		✓	



Domain 2
Governance and Capacity

Each country has identified institutions which can contribute to the institutionalization and capacity building of HTA - the Ministry of Finance and Economy and other relevant government agencies for Brunei Darussalam; the Ministry/ Department of Health, non-profit non-government institution, professional medical societies and associations, and University of Health Science for Lao PDR; and, the Ministry/ Department of Health, professional medical societies and associations, national health insurance agency, and several academic institutions (e.g., Health Strategy and Policy Institute, Hanoi Pharmaceutical University, Ho Chi Minh Medicine and Pharmaceutical University) for Viet Nam.

All three countries have experts in different stakeholder groups who can help institutionalize HTA in their country. Viet Nam already has an HTA-trained team composed of two doctorate degree holders on HTA, a doctorate degree holder on pharmaceutical sciences, and two master's degree holder on health economics. However, Brunei Darussalam noted that programs to support activities related to capacity building currently do not exist in their country. Conversely, Lao PDR and Viet Nam conduct workshops, seminars, and short courses which can contribute to the institutionalization and capacity-building of HTA in their respective country. Tables 27 and 28 summarize the responses per country.

Table 29 summarizes the identified HTA topics necessary for capacity-building activities. All HTA

topics were reported to be necessary by all countries except for Introduction and Application of HTA and Overview of Health Economics. On top of these topics, Lao PDR identified that it needs training on feasibility studies and assessing the appropriateness of medical equipment; while Viet Nam responded that it needs training on modelling and multi-criteria decision analysis (MCDA).

Table 27
Existing Experts in the Country for HTA Institutionalization and

Stakeholder	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Government	✓	✓	✓
Health researchers / Academe		✓	✓
Professional medical societies & associations		✓	✓
Industry		✓	✓
Other specified answers		NGO	

NGO: non-government organization

Table 28
Existing Programs in the Country Necessary for Institutionalization and Capacity Building on HTA

Programs	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Workshop		✓	✓
Seminars		✓	✓
Short course		✓	✓
Master's Programs			
Doctorate Programs			

Table 29
Identified Necessary HTA Topics

HTA topics	Country		
	Brunei Darussalam	Lao PDR	Viet Nam
Introduction and Application of HTA		✓	✓
Topic selection process for HTA	✓	✓	✓
Institutional processes for HTA	✓	✓	✓
Health care and Policy planning	✓	✓	
Evidence Based Medicine	✓	✓	✓
Systematic Reviews and meta-analysis	✓	✓	✓
Measuring health outcomes	✓	✓	✓
Overview of health economics		✓	
Decision analytic modelling	✓	✓	✓
Budget impact analysis	✓	✓	✓
Ethical, legal, social, and health system impact assessment	✓	✓	✓
Other specified answers		Feasibility studies, Appropriateness of medical equipment	Modelling, MCDA



Discussions and Recommendations

HTA institutionalization in AMS

In view of the ASEAN goal for all AMS to have a functional health technology unit by 2020, this study was done to assess the current status of HTA institutionalization among AMS. This follow-up assessment, which complements the baseline assessment study by Thailand, was able to map and capture the varying levels of HTA capacity and institutionalization among the AMS. We focused on the current governance framework

and capability of countries with established HTA institutions. Meanwhile, we identified the plans, challenges, and barriers in establishing HTA for the AMS in the planning stage.

Both the baseline assessment study results of Thailand and our study have noted similar findings as follows:





The establishment of an HTA institution may be done with or without legal mandate.

The institutionalization of HTA is in response to the desire to deliver UHC which is the core thrust of healthcare systems across AMS. The WHO recognizes HTA as a tool to enable UHC in a country by enabling the government to prioritize the health needs of its population given the finite health budgets, competing health priorities and available technologies in the market. The demand to achieve UHC creates the demand to implement HTA.



The support of various stakeholder groups is essential in translating HTA outputs and services into policies.

The baseline assessment study by Thailand additionally noted that other countries show HTA as an independent process that minimizes potential undue influence from stakeholder groups by demonstrating process principles of transparency, accountability, and inclusiveness.



Local public institutions (such as the policymakers, public health providers, and the national health insurance agencies) are the main/expected users of HTA.

HTA outputs and services currently/will provide evidence-informed decisions to these stakeholders. These outputs and services contribute to the following: development of benefit packages which improve the coverage and delivery of health services; improvement of the quality of health care through the development of clinical practice guidelines; improvement of financial decisions through investments in the right health technologies; and, in resource optimization by reallocating to cost-effective health technologies.



Lack of budget remains a major challenge among AMS.

Countries with established HTA have recommended that sufficient funding and institutional support from the government are some of the key factors that can facilitate its establishment.



Lack of awareness on the impact of HTA in the policymaking process also contributes to the difficulty in establishing and/or conducting HTA.

Increasing and maximizing political economy was recommended to address the various competing interests that affect HTA institutionalization in a given country. Establishing HTA as a national priority will ensure that all stakeholders will play their respective roles and implement the recommendations of HTA.



Lack of the availability and variety of local data are big impediments in conducting HTA.

The development of these data banks is crucial in the HTA process as these are used in assessing various types of health technologies.



Inter-regional collaboration is one of the approaches to strengthen capacity building of HTA institutions.

Further, some countries in the planning stage do not have a dedicated institution but are already performing HTA-related activities. This is important to point out as these countries have their own sets of strengths that need to be recognized and maximized, as well as weaknesses that need to be addressed. These countries also expressed the plan to expand the conduct of HTA on other types of health technologies which is commendable given the identified barriers on institutionalizing HTA for these countries need.



Analysis

External threats, opportunities, weaknesses, and internal strengths (TOWS) of ASEAN in institutionalizing HTA were identified. In further mapping out these, TOWS analysis was done.



STRENGTHS AND OPPORTUNITIES

In terms of strengths, much of these refer to the capacity and best practices among AMS with dedicated HTA institution. The demand for UHC through high quality care and financial risk protection is one of the key drivers in recognizing the value of HTA. On the other hand, areas for collaboration and partnership are some of the prominent opportunities among AMS. Table 30 enumerates the detailed list of strengths and opportunities in HTA among AMS.

Table 30
Regional and Individual Strengths and Opportunities

Strengths	Opportunities
1. Majority of AMS respondents have established HTA units. Two of the AMS countries in the planning stage are already performing HTA activities even without a dedicated HTA agency.	1. The ASEAN can take advantage of the existing regional network (i.e., HTAsiaLink) and the support of global development partners such as the WHO in strengthening the capacity of the region. Among AMS countries with established HTA:
2. The driving forces (i.e., demand for high quality health care and financial risk protection) are connected to the bigger UHC agenda hence even without a specific law on HTA, the value of HTA is recognized.	2. There are many learning opportunities from the best practices, experiences and recommendations of those with established HTA agencies such as:
3. All have existing collaborations both locally and internationally. Locally, collaborations with the government and academe - advantage of government involvement is accountability and sustainability; while involvement of the academe ensures high quality work	<ul style="list-style-type: none"> • Multi-stakeholder approach • Existence of HTA studies database and health management information systems • Strategies in achieving high impact recommendations • Recommended factors to successfully institutionalize HTA • Diversified expertise • Indicators for assessing HTA recommendation impact • Establishment of local HTA postgraduate program/s tailored fit to the ASEAN region to sustainably produce a critical mass of HTA producers
4. All embody consistency and accountability in the work of institutionalizing HTA infrastructure by having systematic blueprints in the form of methods and process guides and decision criteria.	
5. All have processes in place to evaluate the quality of their outputs and services.	
6. Majority implements a multi-stakeholder approach.	
7. HTA studies database and health management information systems exist in some countries	
8. Their experiences allow the identification of enabling factors to successfully institutionalize HTA	
9. Diversified expertise in HTA exists in some countries	
10. Post-graduate academic programs on HTA which are established in some countries that are responsive and tailored for ASEAN countries and can foster academic collaboration within and between/ among AMS.	
11. All have existing collaborative projects on HTA.	
12. There are existing local experts where they can leverage from.	

Note: Numbers and ordering do not necessarily represent ranking in this table.

WEAKNESSES AND THREATS

In terms of weaknesses, both AMS with dedicated HTA institutions and AMS in the planning stage share common gaps such as availability of local data, use of communication platforms, and presence of trained personnel within the organization. External threats identified were lack of political buy-in and lack of awareness on HTA among key stakeholders. Detailed weaknesses and threats can be found in Table 31.

Table 31
Regional and Individual Weaknesses and External Threats

Weaknesses		Threats	
1.	There are still gaps in local data availability that will enable HTAs among countries with established HTA agencies and countries at the planning stage.	1.	There are perceived barriers include lack of political buy-in, lack of facilities, lack of funding, lack of institutional support, and conflict with stakeholders.
2.	While many countries produce rapid reviews, systematic reviews, and economic evaluations, only few are performing feasibility studies which are essential in health technology management.	2.	There is still a need to improve HTA awareness among policymakers, academe, professional medical societies, patients and consumers, and the industry.
3.	Many countries do not produce research agenda needs which can be challenging in ensuring that research outputs are aligned to policy needs.		
4.	Only one country stated the presence of dedicated media personnel. Effective communication is important in ensuring that HTA results are well communicated and tailored to all stakeholders.		
5.	All have shared that there is still at least one HTA-related topic for further training needed by their respective HTA personnel despite the existence of training opportunities covering the same topic area in their country.		
6.	Few countries are conducting assessments health technologies which consider ethical, legal, social and health systems impact (ELSHSI).		
7.	Many countries have not yet explored the use of official government issuances and media collaboration as effective tools in disseminating and communicating HTA outputs.		
8.	There is a perceived barrier that includes lack of trained personnel.		
9.	There is an expressed lack of training opportunities for HTA.		

Note: Numbers and ordering do not necessarily represent ranking in this table.

Using TOWS analysis, identified internal strengths and weaknesses were partnered to external opportunities and threats (Table 32). From this analysis, recommendations to the ASEAN and its Member States were drawn.

Looking into the opportunities, internal strengths including existing expertise and experience in the region can maximize the support that AMS with dedicated HTA institutions can provide to AMS in the planning stage through collaboration. The most impactful collaboration can be in the form of an inter-government partnerships through HTA advocacy activities, joint assessments, development of common methodological frameworks, regional trainings, information exchange activities, and knowledge management platforms. These countries noted that among all the available institutions in the country, the government is the most capable to establish an HTA institution. As HTA is a multidisciplinary field, AMS have noted that ministries of health, finance and economic affairs may be of vital assistance in the establishment of an agency in their country.

There is a low to medium perceived level of awareness among the valuable stakeholders despite them recognizing that HTA is a vital tool in realizing UHC. With the identified threats in this analysis, internal strengths on regional HTA commitment and advocacy can contribute in resolving the lack of political buy-in and in increasing the awareness among key stakeholders.

Existing gaps in local data availability including ELSHSI (ethical, legal, social, and health system impact) studies can be addressed by the existence of a platform in ASEAN for sharing best practices and exchanging meaningful information. Some of the discussed activities include capacity building through educational courses. AMS have noted that there are available experts in the different academic fields; however, there remains a lack of locally available educational courses that can help increase the capacity on HTA. AMS with advanced HTA institutions can design and conduct workshops, seminars, short courses and eventually formal education in the form of post-graduate programs with ASEAN scholarship support across known universities in the region in order to sustainably produce a critical mass of HTA doers and practitioners across countries. Training is a bright

spot for regional collaboration with topics which can range from introductory to more technical HTA methods like systematic reviews, measuring health outcomes and decision analytic modelling, to name a few, depending on the training needs of the country. Trainings can be conducted also for policy makers and public health care providers as they are the perceived end-users of HTA results and to increase the political economy of HTA in supporting the government to develop and implement evidence-informed policies.

The ASEAN Health Cluster 3 key performance target for HTA was for all AMS to have a functional Health Technology Assessment Unit by 2020. Currently, five out of the eight surveyed countries reported to have established an HTA institution in their country. The region has made considerable improvements in establishing HTA, and the drive for all AMS to establish HTA institutions must increase. In consideration of the gaps noted, we identified salient action points at the ASEAN level in light of the region's continuous effort to build and strengthen evidence-informed decision-making through HTA:

- Increase regional political capital for HTA through its promotion during ASEAN meetings which are focused on UHC discussions; and, the conduct of lecture/seminars among high-level policymakers in guiding them to effectively use HTA findings to guide policy development and its value in achieving UHC.
- Increase HTA knowledge and capacity in all countries through regional trainings and by jointly designing courses and training materials for different stakeholders that can be implemented within the different countries in the region.
- Develop common HTA methodological guidelines for AMS
- Consolidate a unified regional research agenda to facilitate the conduct of joint assessments
- Establish a regional database for knowledge management and information sharing of local health and economic input data, assessments, evaluations, and clinical practice guidelines.
- Explore other potential areas of harmonization in HTA among AMS.

Table 32
TOWS Analysis for HTA Capacity Among AMS

	Strengths	Weaknesses
Opportunities	<p>S3-1002 – The best practices, strengths, expertise, experiences and recommendations of AMS with established HTA agencies can serve as leverage of the ASEAN in guiding other AMS countries at the planning stage in institutionalizing their HTA.</p> <p>S1001 – The HTA post-graduate programs in the region can help in building a critical mass of HTA experts in ASEAN through joint assessments, regional trainings, scholarship grants, and information exchange activities.</p>	<p>W101 – International support in building capacity (through assessments) on HTA cannot be effectively maximized without addressing local data gaps which enables the conduct of HTA.</p> <p>W1-2&W4-601 – There are identified gaps in the following key areas, namely: data management, ELSHSI studies, and communication. Inadequate attention given to these gaps may hamper the overall capacity of HTA in ASEAN.</p> <p>W802 – Persisting challenges in accessing training opportunities among AMS in the planning stage can undermine the impact of existing / identified learning opportunities drawn from the strengths of AMS countries with established HTA.</p>
Threats	<p>S2T2 – Recognizing the importance of HTA in achieving UHC makes it a key step in increasing the level of awareness among various stakeholders and plays a role in its eventual establishment in the health system.</p> <p>S3-10T1 – The ASEAN can serve as a platform for HTA advocacy and best practice sharing to engage different stakeholders and achieve political buy-in.</p>	<p>W1T1 – If remain unaddressed, the lack of institutional support and funding can further aggravate the gap in the availability of local data.</p> <p>W4-6T1 – Inadequate effective communication strategies, lack of ELSHSI studies, and lack of local experts can become barriers in establishing political buy-in of HTA in the country.</p> <p>W9T2 – If remain unaddressed, lack of training opportunities on HTA can hamper the level of awareness on HTA of various stakeholder groups.</p>

Strengths and Limitations of this Study

The respondents of the survey were from the official HTA focal points of the AMS; hence, the results presented are deemed to accurately describe the status of HTA institutionalization of each AMS. It is important to note, however, that only eight out of ten ASEAN Member States responded to the survey. Only the responses from these countries were used to describe the region's capacity to institutionalize HTA. Consequently, conclusions and recommendations were drawn only based from these responses.

In addition, we mainly based our survey questions on the EUnetHTA Survey report on HTA organizations (Moharra et. al., 2008) and Global

Survey on Health Technology Assessment (WHO, 2015). In recognition that there are AMS with established HTA institutions while others are just starting to build or to further strengthen their HTA capacity, we contextualized the survey questions to fit the ASEAN landscape; hence, we designed two questionnaires to capture relevant information respective to each. However, when we reviewed the answers of the countries in the planning stage, we noted that some are already performing HTA-related activities but do not necessarily have a dedicated HTA institution.

Conclusions

This study was conducted to assess the status of HTA institutionalization among AMS. Complementing the baseline assessment study by Thailand, this report mapped and captured the varying levels of HTA capacity and institutionalization among AMS. For AMS with dedicated HTA institution, we looked into four critical domains namely mandate, governance and capacity, assessment and appraisal, and evaluation and monitoring. On the other hand, we only focused on the first two domains for AMS in the planning stage.

While the ASEAN post-2015 goal was to for all AMS to have an established HTA institution by 2020, this FUA revealed that five out of eight respondent countries have achieved this goal. Nevertheless, other countries have reported significant progress in their planning activities to institutionalize HTA. Further, we note that AMS have different strengths and actionable areas in terms of HTA capacity and institutionalization. With the varying emerging areas for collaboration, partnership and advocacy, these gaps can serve as opportunities at the regional level.



As evidenced in the findings, there is no one-size-fits-all solution on how to efficiently put up and sustain effective HTA implementation. Nevertheless, we can learn from good practices of countries in and out of the region as reported through initiatives like this. Furthermore, the region can leverage on the existing strengths and internal capacity of advanced countries to guide and navigate others toward becoming one ASEAN.

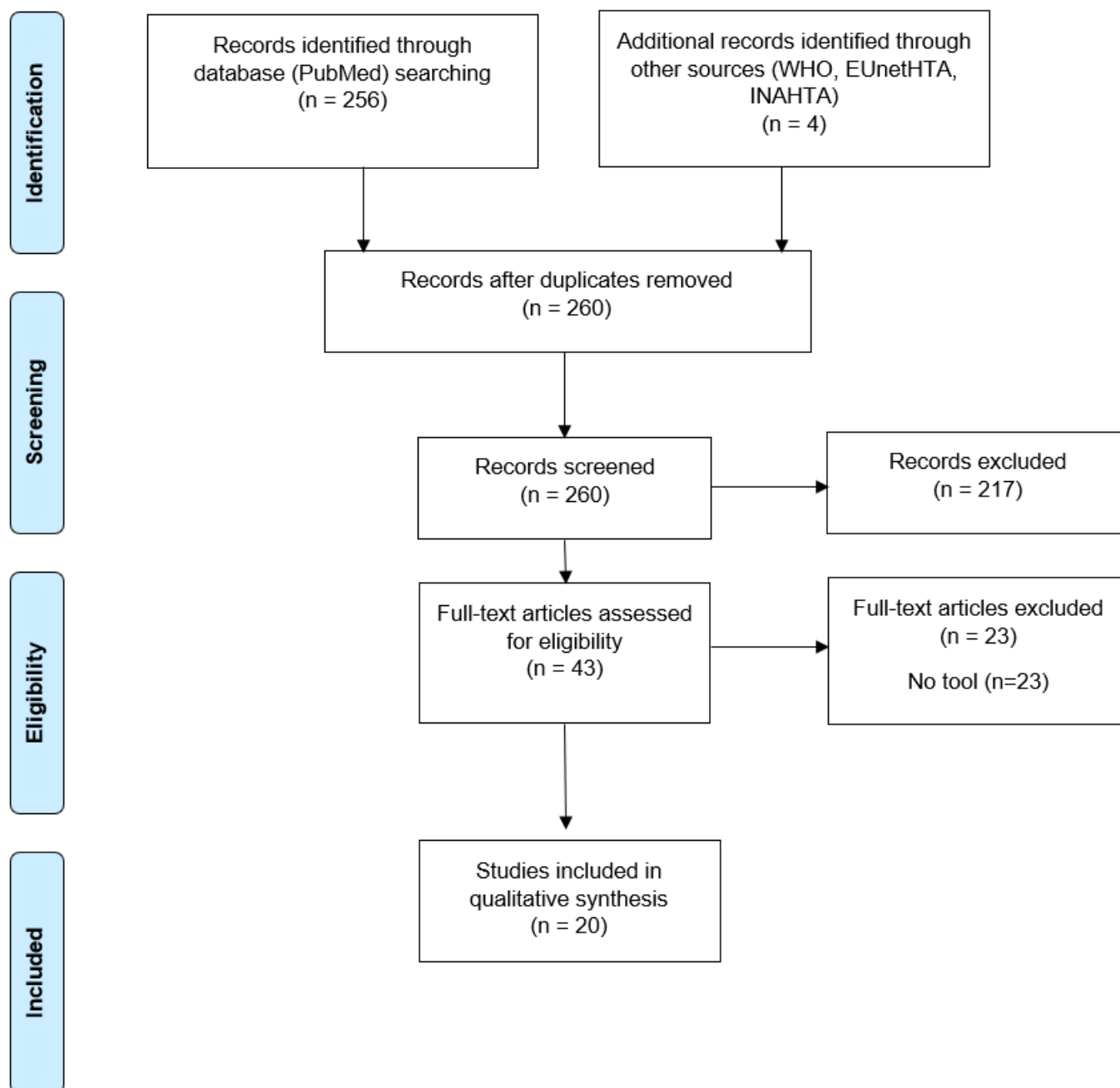
Moving forward, we presented in this FUA key recommendations that ASEAN can consider in support of existing regional roadmap and agenda.

References

1. Assasi, N., Schwartz, L., Tarride, J.E., O'Reilly, D., & Goeree, R. (2015). Barriers and facilitators influencing ethical evaluation in health technology assessment. *Int J Technol Assess Health Care*, 31(3), 113-123. doi:10.1017/S026646231500032X
2. Assasi, N., Tarride, J., O'Reilly, D., & Schwartz, L. (2016). Steps toward improving ethical evaluation in health technology assessment: a proposed framework. *BMC Medical Ethics*, 17(34), 1-16. doi: 10.1186/s12910-016-0118-0
3. Cheung, K.L., Evers, S.M.A.A., de Vries, H., & Hiligsmann, M. (2017). Most important barriers and facilitators regarding the use of health technology assessment. *Int J Technol Assess Health Care*, 33(2), 1-9. doi: 10.1017/S026646231700029
4. Dabak, S.V., Pilsant, S., Mehndiratta, A., Downey, L.E., Cluzeau, F., Chalkidou, K., Luz, A.C.G., Youngkong, S., & Teerawattananon, Y. (2018). Budgeting for a billion: applying health technology assessment (HTA) for universal health coverage in India. *Health Res Policy Syst*, 16(1), 115. doi:10.1186/s12961-018-0378-x
5. de Labry Lima, A. O., Mochon, L. G., Martínez, A. C., Ruiz, E. M., & Balbino, J. E. (2016). Mapping capacity to conduct health technology assessment in Central, Eastern and South-Eastern Europe. *Croatian medical journal*, 57(1), 66-70. doi:10.3325/cmj.2016.57.66
6. Doherty, J.E., Wilkinson, T., Edeka, I., & Hofman, K. (2017). Strengthening expertise for health technology assessment and priority-setting in Africa. *Glob Health Action*, 10, 1-9. doi: 10.1080/16549716.2017.1370194
7. Draborg, E., Gyrd-Hansen, D., Poulsen, P.B., & Horder, M. (2005). International comparison of the definition and the practical application of health technology assessment. *Int J Technol Assess Health Care*, 21(1), 89-95. doi:10.1017/S0266462305050117
8. Guthrie, S., Bienkowska-Gibbs, T., Manville, C., Pollitt, A., Kirtley, A., & Wooding, S. (2015). The impact of the National Institute for Health Research Health Technology Assessment programme, 2003-13: a multimethod evaluation. *Health Technol Assess*, 19(67), 1-291. doi:10.3310/hta19670.
9. Jonsson, E. & Chamova, J. (2000). *Report of the survey results*. Retrieved from http://www.inahta.org/wp-content/uploads/2014/04/INAHTA_Survey_Training-Activities_2000.pdf
10. Kaló, Z., Gheorghe, A., Huic, M., Csanádi, M., Kristensen, F.B. (2016). HTA Implementation Roadmap in Central and Eastern European Countries. *Health Econ*, 25, 179-192. doi:10.1002/hec.3298
11. Kani, C., Kourafalos, V., & Litsa, P. (2017). Current environment for introducing health technology assessment in Greece. *Int J Technol Assess Health Care*, 33(3), 396-401. doi: 10.1017/S0266462317000629
12. MacQuilkan, K., Baker, P., Downey, L., Ruiz, F., Chalkidou, K., Prinjac, S., Zhao, K., Wilkinson, T., Amanda Glassman, A., & Hofman, K. (2018). Strengthening health technology assessment systems in the global south: a comparative analysis of the HTA journeys of China, India and South Africa. *Glob Health Action*, 11(1), 1-13. doi: 10.1080/16549716.2018.1527556
13. Moharra, M., Kubesch, N., Estrada, M.D., Parada, T., Cortés, M., & Espallargues, M. (2008). Survey report on HTA organisations. Retrieved from <https://www.eunetha.eu/wp-content/uploads/2018/01/Survey-report-on-HTA-organisations.pdf>
14. Moharra, M., Espallargues, M., Kubesch, N., Estrada, M.D., Parada, A., Vondeling, H., Lo Scalzo, A., Cristofides, S., Turk, E., & Raab, M. (2009). Systems to support health technology assessment (HTA) in Member States of the European union with limited institutionalization of HTA. *Int J Technol Assess Health Care*, 25, 75-83. doi: 10.1017/S0266462309990717
15. Mundy, L., Trowman, R., & Kearney, B. (2018). Overcoming the barriers to achieving universal health care in the Asian region. *Int J Technol Assess Health Care*, 34(4), 352-359. doi: 10.1017/S0266462318000417
16. Németh, B., Csanádi, M., Kaló, Z. (2017). Overview on the current implementation of health technology assessment in the healthcare system in Hungary. *Int J Technol Assess Health Care*, 33(3), 333-338. doi: 10.1017/S0266462317000071
17. Ozturk, K., Karadayi, B., & Sener, O. (2017). Stakeholders' perceptions of health technology assessment in Turkey. *International Journal of Technology Assessment in Health Care*. doi: 10.1017/S0266462317001039
18. Rosselli, D., Quirland-Lazo, C., Csanádi, M., Ruiz de Castilla, E.M., González, N.C., Valdés, J., Abicalaffe, C., Garzón, W., Leon, G., & Kaló, Z. (2017). HTA Implementation in Latin American Countries: Comparison of Current and Preferred Status. *Value Health Reg Issues*, 14, 20-27. doi: 10.1016/j.vhri.2017.02.004
19. Shah, S.M.B., Barron, A., Klinger, C. & Wright, J.S.F. (2014). A regulatory governance perspective on Health Technology Assessment (HTA) in Sweden. *Health Policy*. doi: 10.1016/j.healthpol.2014.02.014
20. World Health Organization. (2015). 2015 Global Survey on Health Technology Assessment by National Authorities: Main findings. Geneva: WHO Document Production Services


Appendix

PRISMA Flow Diagram of literature search process




ASEAN: A Community of Opportunities for All

 ASEAN

 ASEAN

 @ASEAN

 www.asean.org